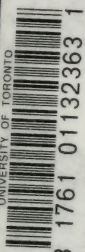


UNIVERSITY OF TORONTO



3 1761 01132363 1

COHOMOLOGIC
TABLES

SIR EDWARD THORPE

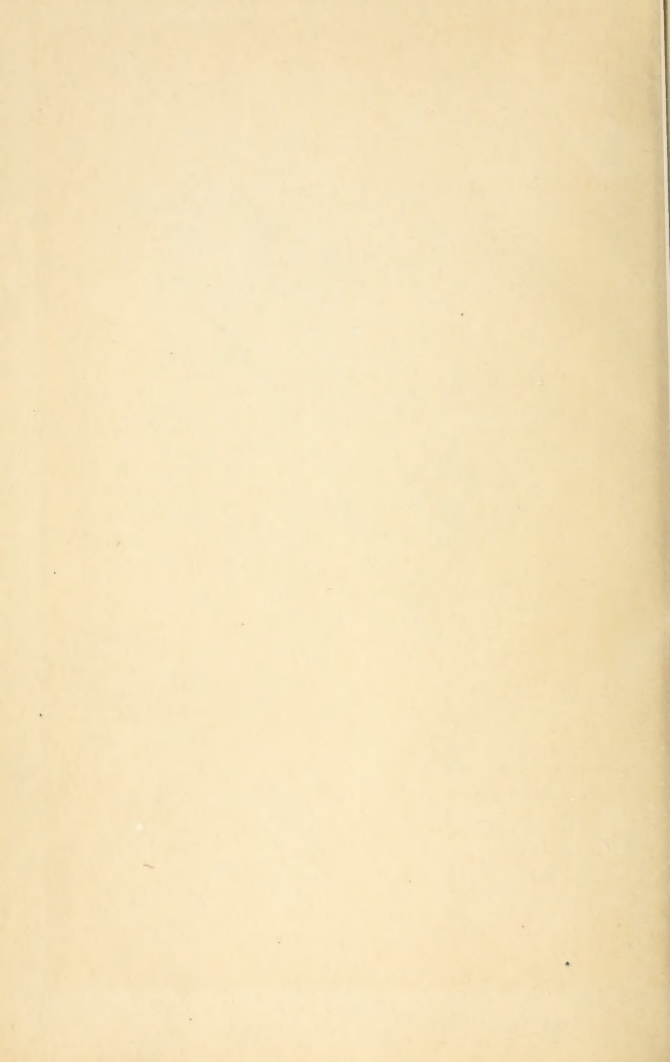
H. WARD SMITH LIBRARY

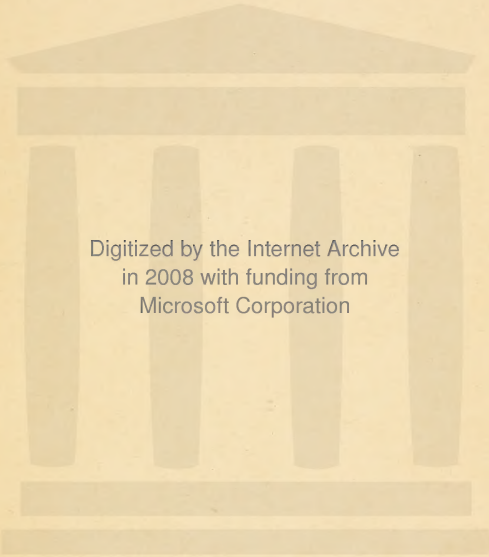
Centre of Forensic Sciences

25 GROSVENOR STREET

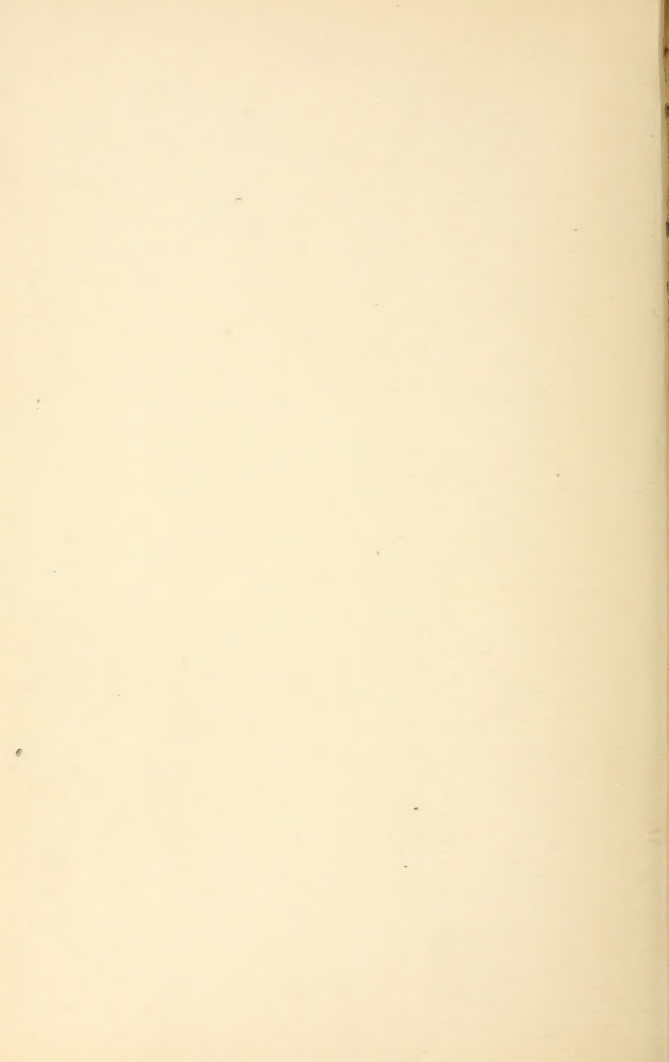
TORONTO, ONTARIO M7A 2G8

C. W. Grover





Digitized by the Internet Archive
in 2008 with funding from
Microsoft Corporation



ALCOHOLOMETRIC TABLES

A DICTIONARY OF APPLIED CHEMISTRY.

By Sir EDWARD THORPE, C.B., LL.D., F.R.S.,
assisted by Eminent Contributors. With Illustrations.
5 Vols. Royal 8vo, 45s. net each.

Vol. I., A-Che. Vol. II., Chi-Go. Vol. III., Gr-Oils.
Vol. IV., Oilstone-Soda Nitre. Vol. V., Sodium-Z.

QUANTITATIVE CHEMICAL ANALYSIS. By

Sir EDWARD THORPE, C.B., LL.D., F.R.S. With
88 Illustrations. Crown 8vo, 4s. 6d.

QUALITATIVE CHEMICAL ANALYSIS AND
LABORATORY PRACTICE. By Sir EDWARD

THORPE, C.B., LL.D., F.R.S., and M. M. PATTISON
MUIR, M.A. With Plate of Spectra and 57 other
Illustrations. Crown 8vo, 3s. 6d.

LONGMANS, GREEN AND CO.

LONDON, NEW YORK, BOMBAY, CALCUTTA, AND MADRAS

ALCOHOLOMETRIC --- TABLES

BY

SIR EDWARD THORPE, C.B., LL.D., F.R.S.

LATE PRINCIPAL OF THE GOVERNMENT LABORATORY, AND EMERITUS
PROFESSOR OF CHEMISTRY, IMPERIAL COLLEGE OF SCIENCE
AND TECHNOLOGY, SOUTH KENSINGTON, LONDON

LONGMANS, GREEN AND CO.

39 PATERNOSTER ROW, LONDON

FOURTH AVENUE & 30TH STREET, NEW YORK

BOMBAY, CALCUTTA, AND MADRAS

1915

INTRODUCTION.

THE accompanying tables were compiled under my direction by Mr. T. J. Cheater and Mr. John Holmes, of the Government Laboratory, and were originally published in an abbreviated form in connexion with the article "Alcoholometry," contributed by Mr. Holmes to "A Dictionary of Applied Chemistry" (Longmans, Green & Co., London). They have now been extended so as to make them more convenient in practical application.

The following general observations on alcoholometry, together with the explanation of the origin and use of the tables, are taken from the article above referred to.

When alcohol and water are mixed together the volume of the mixture is invariably less than the sum of the initial volumes, and the degree of contraction varies with the proportion of alcohol present. In countries in which the revenue from spirit is of great importance it has therefore been found necessary to ascertain by experiment the specific gravities of mixtures of alcohol and water in all proportions and at various temperatures. These experiments have in general been carried out at the request of the governments interested, and the results are embodied in tables associated with the names of those entrusted with the investigations.

In 1794 Sir Charles Blagden and Mr. Gilpin completed an extensive series of experiments, undertaken at the request of the British Government ("Phil. Trans.," 1790-4), the results of which have since served as the basis of systems of alcoholometry in this and other countries. At that time anhydrous alcohol had not been prepared, Blagden and Gilpin's tables having reference to spirit of a specific gravity 0.825 at 15.6°/15.6° C. (60°/60° F.). Tralles, in 1811, conducted a like investigation for the Prussian Government ("Gilb. Ann.," 1811), and adopted 0.7946 as the specific gravity of alcohol at 15.6°/15.6° C. He incidentally confirmed the general accuracy of the results of Blagden and Gilpin, and constructed tables of spirit-strengths which for upwards of sixty years formed the basis of German alcoholometry. Similar researches were undertaken by Gay-Lussac (Paris, 1824), McCulloch (Washington, 1848), Baumhauer (Amsterdam, 1860) Mendeléeff (Petrograd, 1865), and more recently by the Kaiserliche Normal Eichungs Kommission (Berlin, 1889), the several results of which have from time to time been incorporated in the systems of alcoholometry adopted by the respective governments. The unofficial investigations of Fownes ("Phil. Trans.," 1847), Drinkwater ("Chem. Soc. Mem.," 1848), and Squibb ("Ephemeris," 1884), are likewise entitled to consideration.

Drinkwater prepared alcohol of a specific gravity 0.79381 at 15.6°/15.6° C. (in air), whilst Squibb obtained it as low as 0.7935, but this result lacks confirmation.

The work of Mendeléeff for the Russian Government admittedly constitutes the most comprehensive and

exact of the researches hitherto made in the field of alcoholometry. Mendeléeff obtained alcohol of a specific gravity 0·79425 at 15°/15° C., which at 15·6°/15·6° C. is equivalent to 0·79384 in a vacuum, or to 0·79359 in air, and he assigned to Drinkwater's alcohol an alcoholic content of 99·95 per cent, and to the strong spirit of Blagden and Gilpin 89·06 per cent by weight. The results of Tralles' and Gay-Lussac's experiments, being based on alcohol less dehydrated than that of Drinkwater, compare less favourably with those of Mendeléeff.

Mendeléeff was so well satisfied with the work of Blagden and Gilpin, and Drinkwater, that, for spirituous mixtures of low strength, he included many of their results in his tables of spirit-densities, and after a critical investigation and subsequent verification by the Kaiserliche Normal Eichungs Kommission, his results have been substantially adopted as the basis of the present system of German alcoholometry in place of the relatively less accurate data of Tralles.

The results of the work of these four authorities have been incorporated in the accompanying table of spirit-densities, which may serve for the pyknometrical determination of the true strength of spirits.

In the assessment of duty and in commercial transactions, the standard of strength is termed "proof". Spirit of proof strength is defined as "that which at the temperature of 51° F. (10·6° C.) weighs exactly $\frac{1}{15}$ ths of an equal measure of distilled water" also at 10·6° C. According to the best available data this mixture of alcohol and water has a specific gravity of 0·91976 at 15·6°/15·6° C., and contains 49·28 per cent by weight

and 57.10 per cent by volume of anhydrous alcohol. Spirits which contain a greater proportion of alcohol than is contained in proof spirit are said to be of overproof strength (o.p.), and those which contain a smaller proportion are said to be of underproof strength (u.p.). Variations of temperature are deemed not to affect the fiscal strength of spirits. Spirits which are of proof strength at 10.6° C. are consequently deemed to be of proof strength at other temperatures, and the same applies to spirits of any other strength, provided that no change in composition has occurred. In computing the strength of a spirit mixture reference is made to the volume of proof spirit it contains, if underproof, or will produce if overproof, at the dominant temperature, which for revenue purposes in this country is fixed at 10° C. (50° F.). Mendeléeff's alcohol is thus found to be 75.35 overproof, or 100 volumes at 10° C., when diluted with water to proof strength, yield 175.35 volumes at that temperature.

In Table I specific gravities of aqueous alcoholic mixtures are correlated with percentages of alcohol by weight and by volume, and fiscal proof spirit. The specific gravities are reduced to air values and represent the ratio of the weight of a given volume of spirit to the weight of the same volume of water at 15.6° C. under the same atmospheric conditions; they may be converted to specific gravities in a vacuum by means of the expression

$$\frac{\delta + 0.0012}{1.0012}$$

Although it is probable that the density of a spirituous liquid can be determined more accurately by the

use of a pycnometer than by other means, in practical operations where regard must be had to convenience, it is preferable to employ one of the many hydrometers or alcoholometers, the stems of which are variously graduated to show densities, percentages of alcohol by weight or by volume, or again arbitrary indications which can be interpreted by suitable tables.

Since the year 1816, Sikes' hydrometer has been the legal instrument for ascertaining the strength of spirits for revenue purposes in Great Britain and Ireland, as well as in most of the British Colonies. It is made of brass, gilded, and consists of a hollow sphere provided at one pole with a graduated rectangular stem uniform in section, and at the other with a conical spindle terminating in an oval counterpoise to give stability to the instrument when floating in a liquid, and also to serve as an attachment for various poises. The graduated portion of the stem contains ten principal divisions, which are equal in length, and marked "0" at the upper, and "10" at the lower end, and between these points the stem is again subdivided to two-tenths of a division. When the instrument is floating at the "0" mark in spirit at a temperature of 15.6° C., it indicates a strength of 66.7 overproof, or 92.50 per cent of alcohol, whilst the "10" mark corresponds to a strength of 58 overproof, or 86.11 per cent of alcohol (by weight). For strengths weaker than these a series of nine poises or weights is used, numbered consecutively from 10 to 90. The poises are made of hammered brass, gilded, and can be attached by means of a slot in the poise to the

spindle of the hydrometer. The series of principal divisions can thus be repeated ten times, reading from "0" to "100," which latter indication represents distilled water. Sikes' hydrometer indications refer to readings on the stem at the surface of the liquid in which it is floating, the capillary meniscus being disregarded; and are interpreted into proof-strengths by means of tables which are arranged so as to identify a sample of spirits at any temperature between -1.1°C . (30°F .) and $+37.8^{\circ}\text{C}$. (100°F .).

The hydrometer which is used for strong spirits beyond the range of the ordinary Sikes' instrument is known as the "A" or "Light hydrometer," and tables proper to this instrument are also issued. It is made of brass, gilded, and graduated on the stem similarly to Sikes' hydrometer. When floating at the "0" mark in spirit at a temperature of 15.6°C ., it indicates a strength of 73.5 overproof, or 98.24 per cent of alcohol, whilst the "10" mark corresponds to 66.7 overproof, or 92.50 per cent of alcohol by weight, the strength proper to the "0" mark on Sikes' hydrometer.

In the United States of America Tralles' tables are legalized and, as in England, revenue is raised with reference to a mixture of alcohol and water termed "proof". American proof spirit is defined as containing one-half of its volume of Tralles' alcohol at 15.6°C . For Excise purposes a series of alcoholometers are employed, each having a limited range, and indicating percentages of proof spirit—"0" representing water, "100" proof spirit, and "200" alcohol—and readings at temperatures other than 15.6°C . are corrected by means of tables to what they would be

in the same spirit at that temperature. In comparing American with British proof it is necessary to remember that the American gallon is smaller than the British Imperial gallon, 100 British being equivalent to 120 American gallons. Consequently, 100 British proof gallons are equal to 137 American proof gallons.

Similarly, in Holland a proof standard is recognized. Dutch proof contains 50 per cent by volume of anhydrous alcohol at 15° C. As in the United States, a series of alcoholometers are employed, differing only in regard to the range of their strength indications. The alcoholometer scale is divided into twenty-eight principal divisions or degrees, which are equal in length, and again subdivided, each principal division representing $\frac{1}{100}$ of the volume of the instrument below the zero mark. Spirit tables based on the results of Baumhauer's investigations accompany the instruments and translate degrees on the scale into percentages of alcohol at 15° C. on which the revenue charge is based.

In Italy, Tralles' alcoholometer is used officially. This instrument is made of glass, and at the standard temperature of 15.6° C. directly indicates the volume of alcohol contained in 100 volumes of spirit when measured at the same temperature. Indications at other temperatures are corrected by means of tables to true percentages by volume at 15.6° C.

In Austria-Hungary an alcoholometer closely resembling Tralles', and indicating percentages of alcohol by volume at 15° C., is used. Its indications are uniformly higher than those of Tralles' to the extent of from one- or two-tenths per cent. Readings on this instrument are taken at the highest point of the

capillary meniscus, which extends 1-2 mm. on the stem above the normal surface of the liquid.

Tralles' alcoholometer and tables are used commercially in Russia, but for Revenue purposes a metal hydrometer with nine poises similar in character to Sikes' hydrometer is official. On this instrument, however, Sikes' indications are reversed, so that "100" is made to represent strong spirit, and "0" distilled water. The hydrometer scale is arbitrary, and indications are interpreted into percentages by volume of Tralles' alcohol at the standard temperature of 15.6° C.

Previous to the year 1887, Tralles' instrument was also used in Germany. It has now been replaced by a system of weight alcoholometry, based on Mendeléeff's data, whereby the proportion by weight of alcohol is determined. The official alcoholometers are made of glass, and graduated to show percentages of alcohol by weight at 15° C.—apparent percentages at other temperatures being converted into true percentages by means of tables. Duty is, however, charged on the volume of anhydrous alcohol present in a spirit when measured at 15.6° C. This system is therefore analogous to the British, with the exception that the dominant temperature at which British proof-strengths are computed is 10° C.

In France, Gay-Lussac's original volume-alcoholometer and tables have been corrected to the new values for densities of mixtures of alcohol and water determined by the "Bureau National des Poids et Mesures" (1884). The density of anhydrous alcohol at 15°/15° C. is given as 0.79433 in vacuum, as against 0.7947 assumed

by Gay-Lussac, and the difference between the graduations of the old and new official instruments reaches a maximum of 0.4 per cent for spirits containing from 20 to 21 per cent of alcohol by volume. Thus 20° at a temperature of 15° C. on the new legal centesimal alcoholometer indicates spirit containing 20 per cent by volume of alcohol, and corresponds to 20.4 on Gay-Lussac's original instrument. The French spirit tables indicate, at temperatures extending from 0° to 30° C., the percentage by volume of alcohol which a liquid contains at 15° C.

Previous to the adoption of Gay-Lussac's alcoholometer and tables by the French Government, Cartier's areometer was used as the Revenue instrument. Its stem is graduated from 10 to 45 in divisions of equal length, and indicates the concentration of a spirituous liquid by arbitrary degrees, which serve as spirit-strengths for charging duty. Cartier's areometer is still used in Spain and South America.

In Switzerland, Beck's hydrometer is used for spirit assaying and, like Cartier's instrument, of which it is a modification, floats at the lowest indication in distilled water at 12.5° C. (10° R.).

By means of Tables II and III the indications of any one of these instruments at 15.6° can be converted into degrees of any other, and British fiscal strengths compared with those of other countries.

An indispensable step to a correct assay of spirit is the removal of any foreign matter which may be in solution in the alcoholic mixture. In the case of potable spirits, wines, liqueurs, etc., the spirit is freed from saccharine and other dissolved matter by dis-

tillation. The distillation of a strong spirituous liquid into its own volume so as to obtain an accurate determination of the amount of alcohol present is impracticable with the apparatus and the methods of distillation commonly used, so that although it is possible to distil without loss spirits of underproof strength into the same volume, it is necessary to dilute overproof spirits and distil into two, three, or four times the original volume.

The amount by which the true alcoholic strength of brandy or rum differs from the apparent strength, as indicated by the hydrometer or a density determination, is termed the "obscuration".

TABLE I, showing the percentage of Ethyl Alcohol (1) by weight, and (2) by volume at 60° F., or 15·6° C. ; and the percentage of Fiscal Proof Spirit in aqueous solutions of Ethyl Alcohol of different specific gravities.

The specific gravities are taken at 60° F., or 15·6° C., and are compared with water at the same temperature.

TABLE I.

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·79359	100·00	100·00	175·35
0·7940	99·87	99·92	175·21
2	99·81	99·88	175·15
4	99·75	99·84	175·08
6	99·68	99·80	175·01
8	99·62	99·76	174·94
0·7950	99·55	99·72	174·87
2	99·49	99·68	174·80
4	99·43	99·64	174·73
6	99·36	99·60	174·66
8	99·29	99·56	174·59
0·7960	99·22	99·52	174·52
2	99·16	99·48	174·45
4	99·10	99·44	174·38
6	99·03	99·40	174·31
8	98·97	99·36	174·23

ALCOHOLOMETRIC TABLES

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·7970	98·90	99·32	174·16
2	98·84	99·28	174·09
4	98·78	99·24	174·02
6	98·71	99·20	173·95
8	98·64	99·16	173·88
0·7980	98·57	99·12	173·80
2	98·51	99·08	173·73
4	98·45	99·04	173·66
6	98·38	99·00	173·59
8	98·31	98·95	173·52
0·7990	98·24	98·91	173·44
2	98·18	98·87	173·37
4	98·12	98·83	173·30
6	98·05	98·79	173·23
8	97·98	98·75	173·15
0·8000	97·91	98·70	173·07
2	97·85	98·66	173·00
4	97·79	98·62	172·93
6	97·73	98·58	172·86
8	97·67	98·54	172·78

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8010	97·59	98·49	172·71
2	97·52	98·45	172·63
4	97·46	98·41	172·56
6	97·39	98·37	172·49
8	97·32	98·33	172·41
0·8020	97·25	98·28	172·33
2	97·19	98·24	172·26
4	97·12	98·20	172·19
6	97·05	98·16	172·11
8	96·98	98·11	172·03
0·8030	96·91	98·06	171·95
2	96·85	98·02	171·88
4	96·78	97·98	171·80
6	96·71	97·94	171·72
8	96·64	97·89	171·64
0·8040	96·57	97·84	171·56
2	96·51	97·80	171·49
4	96·44	97·76	171·41
6	96·37	97·71	171·33
8	96·30	97·66	171·25

ALCOHOLOMETRIC TABLES

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8050	96·23	97·62	171·17
2	96·17	97·58	171·09
4	96·10	97·54	171·01
6	96·03	97·49	170·93
8	95·96	97·44	170·85
0·8060	95·89	97·39	170·77
2	95·83	97·35	170·69
4	95·76	97·31	170·61
6	95·69	97·26	170·53
8	95·62	97·21	170·45
0·8070	95·55	97·16	170·37
2	95·48	97·12	170·29
4	95·41	97·08	170·21
6	95·34	97·03	170·13
8	95·27	96·98	170·04
0·8080	95·20	96·93	169·96
2	95·13	96·89	169·88
4	95·06	96·84	169·80
6	94·99	96·79	169·72
8	94·92	96·74	169·64

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8090	94·85	96·69	169·55
2	94·78	96·65	169·47
4	94·71	96·60	169·39
6	94·64	96·55	169·31
8	94·57	96·50	169·22
0·8100	94·50	96·45	169·13
2	94·43	96·41	169·05
4	94·36	96·36	168·97
6	94·29	96·31	168·89
8	94·22	96·26	168·80
0·8110	94·15	96·21	168·71
2	94·08	96·17	168·63
4	94·01	96·12	168·55
6	93·94	96·07	168·46
8	93·87	96·02	168·37
0·8120	93·80	95·97	168·28
2	93·73	95·92	168·20
4	93·66	95·87	168·12
6	93·59	95·82	168·04
8	93·51	95·77	167·95

ALCOHOLOMETRIC TABLES

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8130	93·44	95·72	167·86
2	93·38	95·67	167·77
4	93·31	95·62	167·68
6	93·24	95·57	167·59
8	93·17	95·52	167·50
0·8140	93·08	95·47	167·41
2	93·01	95·42	167·32
4	92·94	95·37	167·23
6	92·87	95·32	167·14
8	92·80	95·27	167·05
0·8150	92·72	95·22	166·96
2	92·65	95·17	166·87
4	92·58	95·12	166·78
6	92·51	95·07	166·69
8	92·44	95·02	166·60
0·8160	92·36	94·97	166·51
2	92·29	94·92	166·42
4	92·22	94·87	166·33
6	92·15	94·82	166·24
8	92·08	94·77	166·15

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8170	92·00	94·71	166·06
2	91·93	94·66	165·97
4	91·86	94·61	165·88
6	91·79	94·56	165·79
8	91·71	94·51	165·69
0·8180	91·63	94·45	165·60
2	91·56	94·40	165·51
4	91·49	94·35	165·42
6	91·42	94·30	165·33
8	91·35	94·25	165·24
0·8190	91·27	94·19	165·14
2	91·20	94·14	165·05
4	91·13	94·09	164·96
6	91·06	94·04	164·87
8	90·98	93·98	164·77
0·8200	90·90	93·92	164·67
2	90·83	93·87	164·58
4	90·76	93·82	164·49
6	90·69	93·77	164·40
8	90·61	93·71	164·30

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8210	90·53	93·65	164·20
2	90·46	93·60	164·11
4	90·39	93·55	164·01
6	90·31	93·50	163·92
8	90·24	93·44	163·82
0·8220	90·16	93·38	163·72
2	90·09	93·33	163·63
4	90·02	93·28	163·54
6	89·95	93·23	163·44
8	89·87	93·17	163·34
0·8230	89·79	93·11	163·24
2	89·72	93·06	163·15
4	89·65	93·01	163·05
6	89·57	92·95	162·95
8	89·49	92·89	162·85
0·8240	89·41	92·83	162·75
2	89·34	92·78	162·66
4	89·27	92·73	162·56
6	89·19	92·67	162·46
8	89·11	92·61	162·36

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8250	89·03	92·55	162·26
2	88·96	92·50	162·16
4	88·89	92·44	162·06
6	88·81	92·38	161·96
8	88·73	92·32	161·86
0·8260	88·65	92·26	161·76
2	88·58	92·21	161·66
4	88·51	92·15	161·56
6	88·43	92·10	161·46
8	88·35	92·04	161·36
0·8270	88·27	91·98	161·26
2	88·20	91·93	161·16
4	88·12	91·87	161·06
6	88·04	91·81	160·96
8	87·96	91·75	160·86
0·8280	87·88	91·69	160·75
2	87·81	91·64	160·65
4	87·74	91·58	160·55
6	87·66	91·52	160·45
8	87·58	91·46	160·35

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8290	87·50	91·40	160·24
2	87·43	91·35	160·15
4	87·35	91·29	160·05
6	87·27	91·23	159·95
8	87·19	91·17	159·84
0·8300	87·11	91·11	159·73
2	87·04	91·06	159·63
4	86·96	91·00	159·53
6	86·89	90·94	159·42
8	86·81	90·88	159·32
0·8310	86·73	90·82	159·21
2	86·66	90·76	159·11
4	86·58	90·70	159·01
6	86·50	90·64	158·90
8	86·42	90·58	158·80
0·8320	86·34	90·52	158·69
2	86·27	90·46	158·59
4	86·19	90·40	158·49
6	86·11	90·34	158·38
8	86·03	90·28	158·27

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8330	85·95	90·22	158·16
2	85·88	90·16	158·06
4	85·80	90·10	157·95
6	85·72	90·04	157·85
8	85·64	89·98	157·74
0·8340	85·56	89·91	157·63
2	85·49	89·85	157·53
4	85·41	89·79	157·42
6	85·33	89·73	157·31
8	85·25	89·67	157·20
0·8350	85·17	89·61	157·10
2	85·10	89·55	157·00
4	85·02	89·49	156·89
6	84·94	89·43	156·78
8	84·86	89·37	156·67
0·8360	84·78	89·30	156·56
2	84·71	89·24	156·46
4	84·63	89·18	156·35
6	84·55	89·12	156·24
8	84·47	89·06	156·13

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8370	84·39	88·99	156·02
2	84·31	88·93	155·91
4	84·23	88·87	155·80
6	84·15	88·81	155·69
8	84·07	88·75	155·58
0·8380	83·99	88·68	155·47
2	83·92	88·62	155·36
4	83·84	88·56	155·25
6	83·76	88·50	155·14
8	83·68	88·44	155·03
0·8390	83·60	88·37	154·92
2	83·52	88·31	154·81
4	83·44	88·25	154·70
6	83·36	88·19	154·59
8	83·28	88·13	154·48
0·8400	83·20	88·06	154·37
2	83·12	88·00	154·26
4	83·04	87·94	154·15
6	82·96	87·88	154·04
8	82·88	87·81	153·93

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8410	82·80	87·74	153·81
2	82·72	87·68	153·70
4	82·64	87·62	153·59
6	82·56	87·56	153·48
8	82·48	87·49	153·37
0·8420	82·40	87·42	153·25
2	82·32	87·36	153·14
4	82·24	87·30	153·03
6	82·16	87·23	152·92
8	82·08	87·16	152·80
0·8430	82·00	87·09	152·68
2	81·92	87·03	152·57
4	81·84	86·96	152·46
6	81·76	86·90	152·35
8	81·68	86·84	152·24
0·8440	81·60	86·77	152·12
2	81·52	86·71	152·01
4	81·44	86·65	151·90
6	81·36	86·58	151·78
8	81·28	86·51	151·66

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8450	81·20	86·44	151·55
2	81·12	86·38	151·44
4	81·04	86·32	151·33
6	80·96	86·26	151·21
8	80·88	86·19	151·09
0·8460	80·79	86·12	150·97
2	80·71	86·06	150·86
4	80·63	86·00	150·75
6	80·55	85·94	150·63
8	80·47	85·87	150·51
0·8470	80·39	85·80	150·39
2	80·31	85·74	150·28
4	80·23	85·67	150·16
6	80·15	85·60	150·04
8	80·06	85·53	149·92
0·8480	79·98	85·46	149·80
2	79·90	85·40	149·69
4	79·82	85·33	149·57
6	79·74	85·26	149·45
8	79·66	85·19	149·33

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8490	79·58	85·12	149·21
2	79·50	85·06	149·10
4	79·42	84·99	148·98
6	79·34	84·92	148·86
8	79·26	84·85	148·74
0·8500	79·17	84·78	148·62
2	79·09	84·72	148·51
4	79·01	84·65	148·39
6	78·93	84·58	148·27
8	78·85	84·51	148·15
0·8510	78·76	84·44	148·03
2	78·68	84·38	147·91
4	78·60	84·32	147·79
6	78·52	84·25	147·67
8	78·43	84·18	147·55
0·8520	78·35	84·11	147·43
2	78·27	84·05	147·31
4	78·19	83·98	147·19
6	78·11	83·91	147·07
8	78·03	83·84	146·95

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8530	77·94	83·77	146·83
2	77·86	83·70	146·71
4	77·78	83·63	146·59
6	77·70	83·56	146·47
8	77·62	83·49	146·35
0·8540	77·53	83·42	146·23
2	77·45	83·36	146·11
4	77·37	83·29	145·99
6	77·29	83·22	145·87
8	77·21	83·15	145·75
0·8550	77·12	83·08	145·62
2	77·04	83·01	145·50
4	76·96	82·94	145·38
6	76·88	82·87	145·26
8	76·80	82·80	145·14
0·8560	76·71	82·73	145·01
2	76·63	82·66	144·89
4	76·55	82·59	144·77
6	76·47	82·52	144·65
8	76·39	82·45	144·53

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8570	76·30	82·38	144·40
2	76·22	82·31	144·28
4	76·14	82·24	144·16
6	76·06	82·17	144·04
8	75·97	82·10	143·91
0·8580	75·88	82·03	143·78
2	75·80	81·96	143·66
4	75·72	81·89	143·54
6	75·64	81·82	143·42
8	75·56	81·75	143·29
0·8590	75·47	81·68	143·16
2	75·39	81·61	143·04
4	75·31	81·54	142·92
6	75·23	81·47	142·80
8	75·14	81·40	142·67
0·8600	75·05	81·32	142·54
2	74·97	81·25	142·42
4	74·89	81·18	142·30
6	74·81	81·11	142·17
8	74·73	81·04	142·04

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8610	74·64	80·97	141·91
2	74·56	80·90	141·79
4	74·48	80·83	141·67
6	74·40	80·76	141·54
8	74·31	80·69	141·41
0·8620	74·22	80·61	141·28
2	74·14	80·54	141·16
4	74·06	80·47	141·04
6	73·98	80·40	140·91
8	73·90	80·33	140·78
0·8630	73·81	80·25	140·65
2	73·73	80·18	140·53
4	73·65	80·11	140·41
6	73·57	80·04	140·28
8	73·48	79·97	140·15
0·8640	73·39	79·89	140·02
2	73·31	79·82	139·90
4	73·23	79·75	139·77
6	73·15	79·68	139·64
8	73·06	79·61	139·51

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8650	72·97	79·53	139·38
2	72·89	79·46	139·26
4	72·81	79·39	139·13
6	72·72	79·32	139·00
8	72·64	79·24	138·87
0·8660	72·55	79·16	138·74
2	72·47	79·09	138·62
4	72·39	79·02	138·49
6	72·31	78·95	138·36
8	72·23	78·88	138·23
0·8670	72·14	78·80	138·10
2	72·06	78·73	137·98
4	71·98	78·66	137·85
6	71·90	78·59	137·72
8	71·81	78·51	137·59
0·8680	71·72	78·43	137·46
2	71·64	78·36	137·33
4	71·56	78·29	137·20
6	71·48	78·22	137·07
8	71·39	78·14	136·94

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8690	71·30	78·06	136·81
2	71·22	77·99	136·68
4	71·14	77·92	136·55
6	71·06	77·85	136·42
8	70·97	77·77	136·29
0·8700	70·88	77·69	136·16
2	70·80	77·62	136·03
4	70·72	77·55	135·90
6	70·64	77·48	135·77
8	70·55	77·40	135·64
0·8710	70·46	77·32	135·50
2	70·38	77·25	135·37
4	70·30	77·18	135·24
6	70·22	77·10	135·11
8	70·13	77·02	134·98
0·8720	70·04	76·94	134·84
2	69·96	76·87	134·71
4	69·88	76·80	134·58
6	69·80	76·73	134·45
8	69·71	76·65	134·32

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8730	69·62	76·57	134·19
2	69·54	76·50	134·06
4	69·46	76·43	133·93
6	69·37	76·35	133·80
8	69·28	76·27	133·67
0·8740	69·19	76·19	133·53
2	69·11	76·12	133·40
4	69·03	76·05	133·27
6	68·95	75·98	133·14
8	68·86	75·90	133·00
0·8750	68·77	75·82	132·86
2	68·69	75·75	132·73
4	68·61	75·68	132·60
6	68·53	75·60	132·47
8	68·44	75·52	132·33
0·8760	68·35	75·44	132·19
2	68·27	75·37	132·06
4	68·19	75·30	131·93
6	68·11	75·22	131·80
8	68·02	75·14	131·67

ALCOHOLOMETRIC TABLES

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8770	67·93	75·06	131·53
2	67·85	74·99	131·40
4	67·77	74·92	131·27
6	67·69	74·84	131·14
8	67·60	74·76	131·00
0·8780	67·51	74·68	130·86
2	67·43	74·61	130·73
4	67·35	74·54	130·60
6	67·27	74·46	130·46
8	67·18	74·38	130·32
0·8790	67·09	74·30	130·18
2	67·01	74·23	130·05
4	66·93	74·15	129·92
6	66·84	74·08	129·78
8	66·75	74·00	129·64
0·8800	66·66	73·91	129·50
2	66·58	73·84	129·37
4	66·50	73·76	129·24
6	66·42	73·68	129·10
8	66·33	73·60	128·96

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8810	66·24	73·52	128·82
2	66·16	73·45	128·69
4	66·08	73·37	128·56
6	65·99	73·29	128·42
8	65·90	73·21	128·28
0·8820	65·81	73·13	128·14
2	65·73	73·06	128·01
4	65·65	72·98	127·88
6	65·57	72·90	127·74
8	65·48	72·82	127·60
0·8830	65·39	72·74	127·46
2	65·31	72·66	127·33
4	65·23	72·58	127·19
6	65·14	72·50	127·05
8	65·05	72·42	126·91
0·8840	64·96	72·34	126·77
2	64·88	72·27	126·63
4	64·80	72·19	126·49
6	64·71	72·11	126·35
8	64·62	72·03	126·21

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8850	64·53	71·95	126·07
2	64·45	71·87	125·93
4	64·37	71·79	125·79
6	64·28	71·71	125·65
8	64·19	71·63	125·51
0·8860	64·10	71·55	125·37
2	64·02	71·47	125·23
4	63·94	71·39	125·09
6	63·85	71·31	124·95
8	63·76	71·23	124·81
0·8870	63·67	71·15	124·67
2	63·59	71·07	124·53
4	63·51	70·99	124·39
6	63·42	70·91	124·25
8	63·33	70·83	124·11
0·8880	63·24	70·75	123·97
2	63·16	70·67	123·83
4	63·08	70·59	123·69
6	62·99	70·51	123·55
8	62·90	70·43	123·41

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8890	62·81	70·35	123·27
2	62·73	70·27	123·13
4	62·65	70·19	122·99
6	62·56	70·11	122·85
8	62·47	70·03	122·71
0·8900	62·38	69·95	122·56
2	62·30	69·87	122·42
4	62·22	69·79	122·28
6	62·13	69·71	122·14
8	62·04	69·63	122·00
0·8910	61·95	69·55	121·85
2	61·87	69·47	121·71
4	61·79	69·39	121·57
6	61·70	69·31	121·43
8	61·61	69·23	121·29
0·8920	61·52	69·14	121·14
2	61·44	69·06	121·00
4	61·36	68·98	120·86
6	61·27	68·90	120·72
8	61·18	68·82	120·57

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8930	61·09	68·74	120·42
2	61·01	68·66	120·28
4	60·93	68·58	120·14
6	60·84	68·50	120·00
8	60·75	68·42	119·85
0·8940	60·66	68·33	119·70
2	60·58	68·25	119·56
4	60·50	68·17	119·42
6	60·41	68·09	119·28
8	60·32	68·01	119·13
0·8950	60·23	67·92	118·98
2	60·15	67·84	118·84
4	60·07	67·76	118·70
6	59·98	67·68	118·56
8	59·89	67·59	118·41
0·8960	59·80	67·50	118·26
2	59·72	67·42	118·12
4	59·64	67·34	117·98
6	59·55	67·26	117·84
8	59·46	67·17	117·69

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·8970	59·37	67·08	117·54
2	59·29	67·00	117·40
4	59·20	66·92	117·26
6	59·11	66·84	117·11
8	59·02	66·76	116·96
0·8980	58·93	66·67	116·81
2	58·85	66·59	116·67
4	58·77	66·51	116·52
6	58·68	66·43	116·37
8	58·59	66·34	116·22
0·8990	58·50	66·25	116·07
2	58·42	66·17	115·93
4	58·33	66·09	115·78
6	58·24	66·01	115·63
8	58·15	65·92	115·48
0·9000	58·06	65·83	115·33
2	57·98	65·75	115·19
4	57·89	65·67	115·04
6	57·80	65·59	114·89
8	57·71	65·50	114·74

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9010	57·62	65·41	114·59
2	57·54	65·33	114·44
4	57·45	65·25	114·29
6	57·36	65·16	114·14
8	57·27	65·07	113·99
0·9020	57·18	64·98	113·84
2	57·10	64·90	113·70
4	57·02	64·82	113·55
6	56·93	64·74	113·40
8	56·84	64·65	113·25
0·9030	56·75	64·56	113·10
2	56·67	64·48	112·95
4	56·58	64·40	112·80
6	56·49	64·31	112·65
8	56·40	64·22	112·50
0·9040	56·31	64·13	112·35
2	56·23	64·05	112·20
4	56·14	63·97	112·05
6	56·05	63·88	111·90
8	55·96	63·79	111·75

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9050	55·87	63·70	111·59
2	55·78	63·62	111·44
4	55·69	63·53	111·29
6	55·60	63·44	111·14
8	55·51	63·35	110·98
0·9060	55·42	63·26	110·82
2	55·34	63·18	110·67
4	55·25	63·10	110·52
6	55·16	63·01	110·37
8	55·07	62·92	110·22
0·9070	54·98	62·83	110·06
2	54·90	62·75	109·91
4	54·81	62·66	109·76
6	54·72	62·57	109·61
8	54·63	62·48	109·45
0·9080	54·54	62·39	109·29
2	54·46	62·31	109·14
4	54·37	62·22	108·99
6	54·28	62·13	108·84
8	54·19	62·04	108·68

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° F.	
0·9090	54·10	61·95	108·52
2	54·01	61·87	108·37
4	53·92	61·78	108·22
6	53·83	61·69	108·06
8	53·74	61·60	107·90
0·9100	53·65	61·51	107·74
2	53·57	61·43	107·59
4	53·48	61·34	107·44
6	53·39	61·25	107·29
8	53·30	61·16	107·13
0·9110	53·21	61·07	106·97
2	53·13	60·99	106·82
4	53·04	60·90	106·67
6	52·95	60·81	106·52
8	52·86	60·72	106·36
0·9120	52·77	60·63	106·20
2	52·69	60·55	106·05
4	52·60	60·46	105·90
6	52·51	60·37	105·74
8	52·42	60·28	105·58

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9130	52·33	60·19	105·42
2	52·24	60·10	105·27
4	52·15	60·01	105·11
6	52·06	59·92	104·95
8	51·97	59·83	104·79
0·9140	51·88	59·74	104·63
2	51·79	59·65	104·48
4	51·70	59·56	104·32
6	51·61	59·47	104·16
8	51·52	59·38	104·00
0·9150	51·43	59·29	103·84
2	51·34	59·20	103·69
4	51·25	59·11	103·53
6	51·16	59·02	103·37
8	51·07	58·93	103·21
0·9160	50·98	58·83	103·05
2	50·89	58·74	102·89
4	50·80	58·65	102·73
6	50·71	58·56	102·57
8	50·62	58·47	102·41

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° F.	
0·9170	50·53	58·38	102·24
2	50·44	58·29	102·08
4	50·35	58·20	101·92
6	50·26	58·11	101·76
8	50·17	58·02	101·60
0·9180	50·08	57·92	101·43
2	49·99	57·83	101·27
4	49·90	57·74	101·11
6	49·81	57·65	100·95
8	49·72	57·56	100·79
0·9190	49·63	57·46	100·62
2	49·54	57·37	100·46
4	49·45	57·28	100·30
6	49·36	57·19	100·14
<i>Fiscal Proof Spirit.</i>			
0·91976	49·28	57·10	100·00
8	49·27	57·09	99·97
0·9200	49·17	56·99	99·80
2	49·08	56·90	99·64
4	48·99	56·81	99·48
6	48·90	56·72	99·32
8	48·81	56·62	99·15

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9210	48·71	56·52	98·98
2	48·62	56·43	98·82
4	48·53	56·34	98·66
6	48·44	56·25	98·50
8	48·35	56·15	98·33
0·9220	48·25	56·05	98·16
2	48·16	55·96	98·00
4	48·07	55·87	97·84
6	47·98	55·78	97·67
8	47·89	55·68	97·50
0·9230	47·79	55·58	97·33
2	47·70	55·49	97·17
4	47·61	55·40	97·00
6	47·52	55·30	96·83
8	47·43	55·20	96·66
0·9240	47·33	55·10	96·49
2	47·24	55·01	96·33
4	47·15	54·92	96·16
6	47·06	54·82	95·99
8	46·97	54·72	95·82

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9250	46·87	54·62	95·65
2	46·79	54·53	95·48
4	46·70	54·44	95·31
6	46·61	54·34	95·14
8	46·51	54·24	94·97
0·9260	46·40	54·14	94·80
2	46·31	54·05	94·63
4	46·22	53·95	94·46
6	46·13	53·85	94·29
8	46·04	53·75	94·12
0·9270	45·94	53·65	93·95
2	45·85	53·56	93·78
4	45·76	53·46	93·61
6	45·67	53·36	93·44
8	45·57	53·26	93·27
0·9280	45·47	53·16	93·09
2	45·38	53·07	92·92
4	45·29	52·97	92·75
6	45·20	52·87	92·58
8	45·10	52·77	92·41

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9290	45·00	52·67	92·23
2	44·91	52·58	92·06
4	44·82	52·48	91·89
6	44·73	52·38	91·72
8	44·63	52·28	91·54
0·9300	44·53	52·18	91·36
2	44·44	52·08	91·19
4	44·35	51·98	91·02
6	44·26	51·88	90·85
8	44·16	51·78	90·67
0·9310	44·06	51·68	90·49
2	43·97	51·58	90·32
4	43·88	51·48	90·15
6	43·79	51·38	89·97
8	43·69	51·28	89·79
0·9320	43·59	51·18	89·61
2	43·50	51·08	89·43
4	43·41	50·98	89·25
6	43·31	50·88	89·07
8	43·21	50·78	88·89

ALCOHOLOMETRIC TABLES

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9330	43·11	50·67	88·71
2	43·02	50·57	88·53
4	42·93	50·47	88·35
6	42·83	50·37	88·17
8	42·73	50·26	87·99
0·9340	42·62	50·15	87·81
2	42·53	50·05	87·63
4	42·43	49·95	87·45
6	42·33	49·85	87·27
8	42·23	49·74	87·08
0·9350	42·13	49·63	86·89
2	42·04	49·53	86·71
4	41·94	49·42	86·53
6	41·84	49·31	86·35
8	41·74	49·20	86·16
0·9360	41·64	49·10	85·97
2	41·55	49·00	85·79
4	41·45	48·90	85·61
6	41·35	48·79	85·42
8	41·25	48·68	85·23

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9370	41·15	48·57	85·04
2	41·05	48·47	84·86
4	40·95	48·37	84·67
6	40·85	48·26	84·48
8	40·75	48·15	84·29
0·9380	40·65	48·04	84·10
2	40·55	47·94	83·91
4	40·45	47·83	83·72
6	40·35	47·72	83·53
8	40·25	47·61	83·34
0·9390	40·15	47·50	83·15
2	40·05	47·39	82·96
4	39·95	47·28	82·77
6	39·85	47·17	82·58
8	39·75	47·06	82·39
0·9400	39·65	46·95	82·19
2	39·55	46·84	82·00
4	39·45	46·73	81·81
6	39·35	46·62	81·62
8	39·25	46·51	81·43

ALCOHOLOMETRIC TABLES

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9410	39·15	46·40	81·23
2	39·05	46·29	81·04
4	38·95	46·18	80·85
6	38·85	46·07	80·66
8	38·75	45·96	80·46
0·9420	38·64	45·85	80·26
2	38·54	45·74	80·06
4	38·44	45·63	79·86
6	38·34	45·52	79·66
8	38·23	45·40	79·46
0·9430	38·12	45·28	79·26
2	38·02	45·17	79·06
4	37·92	45·06	78·86
6	37·82	44·95	78·66
8	37·71	44·83	78·46
0·9440	37·60	44·71	78·26
2	37·50	44·60	78·06
4	37·40	44·49	77·86
6	37·29	44·37	77·66
8	37·18	44·25	77·45

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9450	37·07	44·13	77·24
2	36·97	44·02	77·04
4	36·87	43·90	76·84
6	36·76	43·78	76·63
8	36·65	43·66	76·42
0·9460	36·54	43·54	76·21
2	36·44	43·43	76·01
4	36·33	43·31	75·80
6	36·22	43·19	75·59
8	36·11	43·07	75·38
0·9470	36·00	42·95	75·17
2	35·90	42·83	74·96
4	35·79	42·71	74·75
6	35·68	42·59	74·54
8	35·57	42·47	74·33
0·9480	35·46	42·35	74·12
2	35·36	42·23	73·91
4	35·25	42·11	73·70
6	35·14	41·99	73·49
8	35·03	41·87	73·27

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9490	34·92	41·74	73·05
2	34·81	41·62	72·84
4	34·70	41·50	72·63
6	34·59	41·38	72·42
8	34·48	41·26	72·20
0·9500	34·37	41·13	71·98
2	34·26	41·01	71·76
4	34·15	40·89	71·54
6	34·04	40·76	71·32
8	33·93	40·63	71·10
0·9510	33·81	40·50	70·87
2	33·70	40·38	70·65
4	33·59	40·26	70·43
6	33·48	40·13	70·21
8	33·37	40·00	69·99
0·9520	33·25	39·87	69·76
2	33·14	39·74	69·54
4	33·03	39·61	69·31
6	32·91	39·48	69·08
8	32·79	39·35	68·85

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9530	32·67	39·22	68·62
2	32·56	39·09	68·40
4	32·45	38·96	68·17
6	32·33	38·83	67·94
8	32·21	38·70	67·71
0·9540	32·09	38·57	67·48
2	31·98	38·44	67·25
4	31·86	38·31	67·02
6	31·74	38·17	66·78
8	31·62	38·03	66·54
0·9550	31·50	37·89	66·29
2	31·38	37·76	66·05
4	31·26	37·62	65·81
6	31·14	37·48	65·57
8	31·02	37·34	65·33
0·9560	30·90	37·20	65·09
2	30·78	37·06	64·85
4	30·66	36·92	64·60
6	30·54	36·78	64·35
8	30·41	36·64	64·10

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9570	30·28	36·50	63·85
2	30·16	36·36	63·60
4	30·04	36·22	63·35
6	29·91	36·08	63·10
8	29·79	35·94	62·85
0·9580	29·66	35·79	62·60
2	29·54	35·65	62·35
4	29·42	35·51	62·10
6	29·29	35·36	61·84
8	29·16	35·21	61·58
0·9590	29·03	35·06	61·32
2	28·91	34·92	61·07
4	28·78	34·78	60·81
6	28·65	34·63	60·55
8	28·52	34·48	60·29
0·9600	28·39	34·33	60·03
2	28·26	34·18	59·76
4	28·13	34·03	59·49
6	28·00	33·88	59·22
8	27·87	33·72	58·95

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9610	27·73	33·56	58·68
2	27·60	33·41	58·41
4	27·47	33·26	58·14
6	27·34	33·11	57·87
8	27·20	32·95	57·60
0·9620	27·06	32·79	57·33
2	26·93	32·63	57·05
4	26·79	32·47	56·77
6	26·65	32·31	56·49
8	26·51	32·15	56·21
0·9630	26·37	31·99	55·93
2	26·24	31·83	55·65
4	26·10	31·67	55·37
6	25·96	31·51	55·09
8	25·82	31·35	54·80
0·9640	25·68	31·18	54·51
2	25·54	31·02	54·22
4	25·40	30·85	53·93
6	25·26	30·68	53·64
8	25·12	30·51	53·34

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9650	24·97	30·34	53·04
2	24·83	30·17	52·74
4	24·68	30·00	52·44
6	24·53	29·83	52·14
8	24·38	29·66	51·84
0·9660	24·23	29·48	51·53
2	24·08	29·31	51·22
4	23·93	29·14	50·91
6	23·78	28·96	50·60
8	23·63	28·78	50·29
0·9670	23·48	28·69	49·98
2	23·33	28·42	49·66
4	23·18	28·24	49·34
6	23·03	28·06	49·02
8	22·87	27·88	48·70
0·9680	22·71	27·69	48·38
2	22·56	27·51	48·06
4	22·41	27·33	47·74
6	22·25	27·15	47·42
8	22·09	26·96	47·10

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9690	21·93	26·77	46·77
2	21·78	26·59	46·45
4	21·62	26·40	46·13
6	21·46	26·21	45·80
8	21·30	26·02	45·47
0·9700	21·14	25·83	45·14
2	20·98	25·64	44·81
4	20·82	25·45	44·48
6	20·66	25·25	44·15
8	20·50	25·05	43·81
0·9710	20·34	24·85	43·47
2	20·18	24·67	43·13
4	20·02	24·48	42·79
6	19·86	24·29	42·45
8	19·70	24·10	42·11
0·9720	19·53	23·91	41·77
2	19·37	23·72	41·43
4	19·21	23·53	41·09
6	19·05	23·33	40·75
8	18·89	23·14	40·41

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9730	18·72	22·94	40·06
2	18·56	22·75	39·72
4	18·40	22·56	39·38
6	18·24	22·36	39·04
8	18·07	22·16	38·70
0·9740	17·90	21·96	38·35
2	17·74	21·77	38·01
4	17·58	21·57	37·66
6	17·42	21·37	37·31
8	17·25	21·17	36·96
0·9750	17·08	20·97	36·61
2	16·92	20·78	36·27
4	16·76	20·58	35·92
6	16·59	20·38	35·57
8	16·42	20·18	35·22
0·9760	16·25	19·98	34·87
2	16·09	19·79	34·52
4	15·93	19·59	34·17
6	15·77	19·39	33·83
8	15·60	19·19	33·49

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirits.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9770	15·43	18·99	33·15
2	15·26	18·79	32·80
4	15·09	18·59	32·45
6	14·93	18·39	32·10
8	14·77	18·19	31·76
0·9780	14·61	18·00	31·42
2	14·44	17·80	31·07
4	14·28	17·60	30·72
6	14·12	17·40	30·38
8	13·96	17·21	30·04
0·9790	13·80	17·02	29·70
2	13·63	16·82	29·35
4	13·47	16·62	29·01
6	13·31	16·42	28·67
8	13·15	16·23	28·33
0·9800	12·99	16·04	27·99
2	12·83	15·84	27·65
4	12·67	15·65	27·31
6	12·51	15·46	26·98
8	12·35	15·27	26·65

ALCOHOLOMETRIC TABLES

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9810	12·20	15·08	26·32
2	12·04	14·89	25·98
4	11·88	14·70	25·65
6	11·72	14·51	25·32
8	11·57	14·32	24·99
0·9820	11·42	14·13	24·66
2	11·26	13·94	24·33
4	11·10	13·75	24·00
6	10·95	13·56	23·67
8	10·80	13·38	23·34
0·9830	10·65	13·20	23·02
2	10·50	13·01	22·70
4	10·35	12·83	22·38
6	10·20	12·65	22·06
8	10·05	12·47	21·75
0·9840	9·91	12·29	21·44
2	9·76	12·11	21·12
4	9·61	11·93	20·80
6	9·46	11·75	20·49
8	9·32	11·57	20·18

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9850	9·18	11·40	19·87
2	9·04	11·22	19·56
4	8·89	11·04	19·25
6	8·75	10·86	18·95
8	8·60	10·69	18·64
0·9860	8·46	10·51	18·34
2	8·32	10·34	18·04
4	8·18	10·17	17·74
6	8·04	9·99	17·44
8	7·90	9·82	17·15
0·9870	7·76	9·65	16·85
2	7·62	9·48	16·55
4	7·49	9·31	16·26
6	7·35	9·14	15·96
8	7·22	8·97	15·67
0·9880	7·08	8·80	15·38
2	6·94	8·64	15·09
4	6·81	8·47	14·81
6	6·67	8·31	14·52
8	6·54	8·14	14·23

ALCOHOLOMETRIC TABLES

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9890	6·41	7·98	13·94
2	6·28	7·82	13·66
4	6·15	7·66	13·37
6	6·02	7·50	13·09
8	5·89	7·34	12·81
0·9900	5·76	7·18	12·53
2	5·64	7·02	12·25
4	5·51	6·87	11·98
6	5·39	6·71	11·70
8	5·26	6·56	11·43
0·9910	5·13	6·40	11·16
2	5·01	6·24	10·89
4	4·88	6·09	10·62
6	4·76	5·93	10·36
8	4·63	5·78	10·09
0·9920	4·51	5·63	9·82
2	4·39	5·48	9·56
4	4·26	5·33	9·29
6	4·14	5·18	9·03
8	4·02	5·03	8·77

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9930	3·90	4·88	8·51
2	3·78	4·73	8·25
4	3·66	4·58	8·00
6	3·54	4·44	7·74
8	3·43	4·29	7·49
0·9940	3·31	4·14	7·24
2	3·19	4·00	6·99
4	3·08	3·85	6·74
6	2·96	3·71	6·48
8	2·85	3·56	6·23
0·9950	2·73	3·42	5·98
2	2·62	3·28	5·73
4	2·51	3·13	5·48
6	2·39	2·99	5·23
8	2·28	2·85	4·98
0·9960	2·17	2·71	4·73
2	2·06	2·57	4·49
4	1·95	2·43	4·24
6	1·83	2·29	4·00
8	1·72	2·16	3·76

Specific gravity in air at 60° F./60° F. or 15·6° C./15·6° C.	Percentage of ethyl alcohol.		Percentage of fiscal proof spirit.
	By weight.	By volume at 60° F. or 15·6° C.	
0·9970	1·61	2·02	3·52
2	1·50	1·88	3·28
4	1·39	1·75	3·04
6	1·29	1·61	2·80
8	1·18	1·48	2·57
0·9980	1·07	1·34	2·33
2	0·96	1·20	2·09
4	0·85	1·07	1·86
6	0·75	0·93	1·62
8	0·64	0·80	1·39
0·9990	0·53	0·66	1·16
2	0·42	0·53	0·93
4	0·31	0·40	0·70
6	0·21	0·26	0·46
8	0·10	0·13	0·23

TABLE II, showing the indications of Sikes' hydrometer and the percentage of British Proof Spirit, together with the corresponding percentages of American Proof Spirit; of Ethyl Alcohol by weight (Germany); by volume at 15° C. (France), and at 60° F., or 15·6° C., according to Tralles.

TABLE II.

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
A 0·0	73·5	198·2	98·2	98·9	99·1
·2	73·4	198·1	98·1	98·9	99·1
·4	73·3	198·0	98·0	98·8	99·0
·6	73·2	197·8	97·9	98·8	99·0
·8	73·1	197·7	97·8	98·7	98·9
A 1·0	72·9	197·5	97·7	98·6	98·8
·2	72·8	197·4	97·6	98·6	98·8
·4	72·7	197·3	97·5	98·5	98·7
·6	72·5	197·1	97·4	98·4	98·6
·8	72·4	197·0	97·3	98·3	98·5
A 2·0	72·2	196·8	97·2	98·2	98·4
·2	72·1	196·7	97·1	98·2	98·4
·4	72·0	196·6	97·0	98·1	98·3
·6	71·9	196·4	96·9	98·0	98·2
·8	71·8	196·3	96·8	97·9	98·1

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
A 3·0	71·6	196·1	96·6	97·8	98·0
·2	71·5	196·0	96·5	97·8	98·0
·4	71·4	195·9	96·4	97·7	97·9
·6	71·3	195·7	96·3	97·6	97·8
·8	71·2	195·5	96·2	97·6	97·8
A 4·0	71·0	195·3	96·1	97·5	97·7
·2	70·9	195·2	96·0	97·5	97·7
·4	70·8	195·1	95·9	97·4	97·6
·6	70·7	195·0	95·8	97·3	97·5
·8	70·5	194·8	95·7	97·2	97·4
A 5·0	70·3	194·6	95·5	97·1	97·3
·2	70·2	194·5	95·4	97·1	97·3
·4	70·1	194·4	95·3	97·0	97·2
·6	69·9	194·2	95·2	96·9	97·1
·8	69·8	194·0	95·1	96·8	97·0
A 6·0	69·6	193·8	94·9	96·7	96·9
·2	69·5	193·7	94·8	96·7	96·9
·4	69·4	193·6	94·7	96·6	96·8
·6	69·3	193·4	94·6	96·5	96·7
·8	69·1	193·2	94·5	96·4	96·6

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
A 7·0	68·9	193·0	94·3	96·3	96·5
·2	68·8	192·9	94·2	96·3	96·5
·4	68·7	192·8	94·1	96·2	96·4
·6	68·6	192·6	94·0	96·1	96·3
·8	68·4	192·4	93·9	96·0	96·2
A 8·0	68·2	192·2	93·7	95·9	96·1
·2	68·1	192·1	93·6	95·8	96·0
·4	68·0	191·9	93·5	95·7	95·9
·6	67·9	191·7	93·4	95·6	95·8
·8	67·7	191·5	93·3	95·5	95·7
A 9·0	67·5	191·3	93·1	95·4	95·6
·2	67·4	191·2	93·0	95·4	95·6
·4	67·3	191·0	92·9	95·3	95·5
·6	67·1	190·8	92·8	95·2	95·4
·8	66·9	190·6	92·7	95·1	95·3
0·0	66·7	190·4	92·5	95·0	95·2
·2	66·6	190·3	92·4	95·0	95·2
·4	66·5	190·2	92·3	94·9	95·1
·6	66·4	190·0	92·2	94·8	95·0
·8	66·2	189·8	92·1	94·7	94·9

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
1·0	66·0	189·6	91·9	94·7	94·8
·2	65·9	189·5	91·8	94·6	94·7
·4	65·8	189·3	91·7	94·5	94·6
·6	65·6	189·1	91·6	94·4	94·5
·8	65·4	188·9	91·5	94·3	94·4
2·0	65·2	188·7	91·3	94·2	94·3
·2	65·1	188·5	91·2	94·2	94·3
·4	65·0	188·3	91·1	94·1	94·2
·6	64·8	188·1	91·0	94·0	94·1
·8	64·6	187·9	90·9	93·9	94·0
3·0	64·4	187·7	90·7	93·8	93·9
·2	64·3	187·6	90·6	93·7	93·8
·4	64·2	187·4	90·5	93·6	93·7
·6	64·0	187·2	90·4	93·5	93·6
·8	63·8	187·0	90·2	93·4	93·5
4·0	63·6	186·8	90·0	93·3	93·4
·2	63·5	186·6	89·9	93·2	93·3
·4	63·4	186·4	89·8	93·1	93·2
·6	63·2	186·2	89·7	93·0	93·1
·8	63·0	186·0	89·6	92·9	93·0

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
5·0	62·8	185·8	89·4	92·8	92·9
·2	62·7	185·7	89·3	92·7	92·8
·4	62·5	185·5	89·2	92·6	92·7
·6	62·3	185·3	89·1	92·5	92·6
·8	62·1	185·1	89·0	92·4	92·5
6·0	61·9	184·9	88·8	92·3	92·4
·2	61·8	184·7	88·7	92·2	92·3
·4	61·7	184·5	88·6	92·1	92·2
·6	61·5	184·3	88·5	92·0	92·1
·8	61·3	184·1	88·3	91·9	92·0
7·0	61·1	183·9	88·1	91·8	91·9
·2	61·0	183·7	88·0	91·7	91·8
·4	60·8	183·5	87·9	91·6	91·7
·6	60·6	183·3	87·8	91·5	91·6
·8	60·4	183·1	87·7	91·4	91·5
8·0	60·2	182·9	87·5	91·3	91·4
·2	60·1	182·7	87·4	91·2	91·3
·4	59·9	182·5	87·3	91·1	91·2
·6	59·7	182·3	87·2	91·0	91·1
·8	59·5	182·1	87·0	90·9	91·0

ALCOHOLOMETRIC TABLES

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
9·0	59·3	181·8	86·8	90·8	90·9
·2	59·2	181·6	86·7	90·7	90·8
·4	59·0	181·4	86·6	90·6	90·7
·6	58·8	181·2	86·5	90·5	90·6
·8	58·6	181·0	86·3	90·4	90·5
10·0	58·4	180·8	86·1	90·3	90·4
·2	58·3	180·7	86·0	90·3	90·4
·4	58·2	180·5	85·9	90·2	90·3
·6	58·0	180·3	85·8	90·1	90·2
·8	57·8	180·1	85·7	90·0	90·1
11·0	57·6	179·9	85·6	89·9	90·0
·2	57·5	179·7	85·5	89·8	89·9
·4	57·3	179·5	85·4	89·7	89·8
·6	57·1	179·3	85·3	89·6	89·7
·8	56·9	179·1	85·1	89·5	89·6
12·0	56·7	178·9	84·9	89·4	89·5
·2	56·5	178·7	84·8	89·3	89·4
·4	56·3	178·5	84·7	89·2	89·3
·6	56·1	178·3	84·6	89·1	89·2
·8	55·9	178·1	84·4	89·0	89·1

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
13·0	55·7	177·9	84·2	88·8	88·9
·2	55·6	177·7	84·1	88·7	88·8
·4	55·4	177·5	84·0	88·6	88·7
·6	55·2	177·3	83·9	88·5	88·6
·8	55·0	177·1	83·7	88·4	88·5
14·0	54·8	176·8	83·5	88·3	88·4
·2	54·6	176·6	83·4	88·2	88·3
·4	54·4	176·4	83·3	88·1	88·2
·6	54·2	176·2	83·2	88·0	88·1
·8	54·0	176·0	83·0	87·9	88·0
15·0	53·8	175·7	82·8	87·7	87·8
·2	53·7	175·5	82·7	87·6	87·7
·4	53·5	175·3	82·6	87·5	87·6
·6	53·3	175·1	82·5	87·4	87·5
·8	53·1	174·9	82·3	87·3	87·4
16·0	52·9	174·6	82·1	87·2	87·3
·2	52·7	174·4	82·0	87·1	87·2
·4	52·5	174·2	81·9	87·0	87·1
·6	52·3	174·0	81·8	86·9	87·0
·8	52·1	173·7	81·6	86·8	86·9

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
17·0	51·9	173·4	81·4	86·6	86·7
·2	51·7	173·2	81·3	86·5	86·6
·4	51·5	173·0	81·2	86·4	86·5
·6	51·3	172·8	81·1	86·3	86·4
·8	51·1	172·6	80·9	86·2	86·3
18·0	50·9	172·3	80·7	86·0	86·1
·2	50·7	172·1	80·6	85·9	86·0
·4	50·5	171·9	80·5	85·8	85·9
·6	50·3	171·7	80·4	85·7	85·8
·8	50·1	171·4	80·2	85·6	85·7
19·0	49·9	171·1	80·0	85·5	85·6
·2	49·7	170·9	79·9	85·4	85·5
·4	49·5	170·7	79·8	85·3	85·4
·6	49·3	170·5	79·7	85·2	85·3
·8	49·1	170·3	79·5	85·1	85·2
20·0	48·9	170·0	79·3	84·9	85·0
·2	48·7	169·8	79·2	84·8	84·9
·4	48·5	169·6	79·1	84·7	84·8
·6	48·3	169·4	79·0	84·6	84·7
·8	48·1	169·1	78·8	84·5	84·6

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
21·0	47·9	168·8	78·6	84·3	84·4
·2	47·7	168·6	78·5	84·2	84·3
·4	47·5	168·4	78·4	84·1	84·2
·6	47·3	168·2	78·3	84·0	84·1
·8	47·1	168·0	78·1	83·9	84·0
22·0	46·8	167·7	77·9	83·8	83·9
·2	46·6	167·5	77·8	83·7	83·8
·4	46·4	167·3	77·7	83·6	83·7
·6	46·2	167·1	77·6	83·5	83·6
·8	46·0	166·8	77·4	83·3	83·4
23·0	45·8	166·5	77·2	83·1	83·2
·2	45·6	166·3	77·1	83·0	83·1
·4	45·4	166·1	77·0	82·9	83·0
·6	45·2	165·9	76·9	82·8	82·9
·8	45·0	165·6	76·7	82·7	82·8
24·0	44·7	165·3	76·5	82·5	82·6
·2	44·5	165·1	76·4	82·4	82·5
·4	44·3	164·9	76·3	82·3	82·4
·6	44·1	164·6	76·2	82·2	82·3
·8	43·9	164·3	76·0	82·1	82·2

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
25·0	43·6	164·0	75·8	81·9	82·0
·2	43·4	163·8	75·7	81·8	81·9
·4	43·2	163·6	75·6	81·7	81·8
·6	43·0	163·3	75·4	81·6	81·7
·8	42·8	163·0	75·2	81·5	81·6
26·0	42·5	162·7	75·0	81·3	81·4
·2	42·3	162·5	74·9	81·2	81·3
·4	42·1	162·3	74·8	81·1	81·2
·6	41·9	162·1	74·7	81·0	81·1
·8	41·7	161·8	74·5	80·8	80·9
27·0	41·4	161·5	74·3	80·6	80·7
·2	41·2	161·3	74·2	80·5	80·6
·4	41·0	161·1	74·1	80·4	80·5
·6	40·8	160·8	74·0	80·3	80·4
·8	40·6	160·5	73·8	80·2	80·3
28·0	40·3	160·2	73·6	80·0	80·1
·2	40·1	160·0	73·5	79·9	80·0
·4	39·9	159·8	73·4	79·8	79·9
·6	39·7	159·5	73·2	79·7	79·8
·8	39·4	159·2	73·0	79·6	79·7

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
29·0	39·1	158·9	72·8	79·4	79·5
·2	38·9	158·7	72·7	79·3	79·4
·4	38·7	158·5	72·6	79·2	79·3
·6	38·5	158·2	72·4	79·0	79·1
·8	38·3	157·9	72·3	78·9	79·0
30·0	38·0	157·6	72·1	78·7	78·8
·2	37·8	157·4	72·0	78·6	78·7
·4	37·6	157·2	71·9	78·5	78·6
·6	37·4	156·9	71·7	78·4	78·5
·8	37·2	156·6	71·5	78·3	78·4
31·0	36·9	156·3	71·3	78·1	78·2
·2	36·7	156·1	71·2	78·0	78·1
·4	36·5	155·9	71·1	77·9	78·0
·6	36·3	155·6	71·0	77·8	77·9
·8	36·0	155·3	70·8	77·6	77·7
32·0	35·7	155·0	70·6	77·4	77·5
·2	35·5	154·8	70·5	77·3	77·4
·4	35·3	154·6	70·4	77·2	77·3
·6	35·1	154·3	70·3	77·1	77·2
·8	34·9	154·0	70·1	77·0	77·1

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
33·0	34·6	153·7	69·9	76·8	76·9
·2	34·4	153·5	69·8	76·7	76·8
·4	34·2	153·3	69·7	76·6	76·7
·6	34·0	153·0	69·5	76·5	76·6
·8	33·7	152·7	69·3	76·3	76·4
34·0	33·4	152·4	69·1	76·1	76·2
·2	33·2	152·2	69·0	76·0	76·1
·4	33·0	151·9	68·9	75·9	76·0
·6	32·8	151·6	68·8	75·8	75·9
·8	32·5	151·3	68·6	75·6	75·7
35·0	32·2	151·0	68·4	75·4	75·5
·2	32·0	150·8	68·3	75·3	75·4
·4	31·8	150·5	68·2	75·2	75·3
·6	31·6	150·2	68·0	75·1	75·2
·8	31·3	149·9	67·8	74·9	75·0
36·0	31·0	149·6	67·7	74·7	74·8
·2	30·8	149·4	67·6	74·6	74·7
·4	30·6	149·1	67·5	74·5	74·6
·6	30·4	148·8	67·4	74·6	74·7
·8	30·1	148·5	67·1	74·3	74·4

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
37·0	29·8	148·2	66·8	74·0	74·1
·2	29·6	148·0	66·7	73·9	74·0
·4	29·4	147·7	66·6	73·8	73·9
·6	29·1	147·4	66·5	73·7	73·8
·8	28·8	147·1	66·3	73·5	73·6
38·0	28·5	146·8	66·1	73·3	73·4
·2	28·3	146·6	66·0	73·2	73·3
·4	28·1	146·3	65·9	73·1	73·2
·6	27·9	146·0	65·7	73·0	73·1
·8	27·6	145·7	65·5	72·8	72·9
39·0	27·3	145·4	65·3	72·6	72·7
·2	27·1	145·2	65·2	72·5	72·6
·4	26·9	144·9	65·1	72·4	72·5
·6	26·6	144·6	64·9	72·3	72·4
·8	26·3	144·3	64·7	72·1	72·2
40·0	26·0	144·0	64·5	71·9	72·0
·2	25·8	143·8	64·4	71·8	71·9
·4	25·6	143·5	64·3	71·7	71·8
·6	25·4	143·2	64·2	71·6	71·7
·8	25·1	142·9	64·0	71·4	71·5

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
41·0	24·8	142·6	63·8	71·2	71·3
·2	24·6	142·3	63·7	71·1	71·2
·4	24·4	142·0	63·6	71·0	71·1
·6	24·2	141·7	63·4	70·9	71·0
·8	23·9	141·4	63·2	70·7	70·8
42·0	23·6	141·1	63·0	70·5	70·6
·2	23·4	140·9	62·9	70·4	70·5
·4	23·2	140·6	62·8	70·3	70·4
·6	22·9	140·3	62·6	70·2	70·3
·8	22·6	140·0	62·4	70·0	70·1
43·0	22·3	139·7	62·2	69·7	69·8
·2	22·1	139·4	62·1	69·6	69·7
·4	21·9	139·1	62·0	69·5	69·6
·6	21·6	138·8	61·8	69·4	69·5
·8	21·3	138·5	61·6	69·2	69·3
44·0	21·0	138·2	61·4	69·0	69·1
·2	20·8	137·9	61·3	68·9	69·0
·4	20·6	137·6	61·2	68·8	68·9
·6	20·3	137·3	61·0	68·7	68·8
·8	20·0	137·0	60·8	68·5	68·6

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
45·0	19·7	136·7	60·6	68·3	68·4
·2	19·5	136·4	60·5	68·2	68·3
·4	19·2	136·1	60·4	68·1	68·2
·6	18·9	135·8	60·2	67·9	68·0
·8	18·6	135·5	60·0	67·7	67·8
46·0	18·3	135·2	59·8	67·5	67·6
·2	18·1	134·9	59·7	67·4	67·5
·4	17·9	134·6	59·6	67·3	67·4
·6	17·6	134·3	59·4	67·1	67·2
·8	17·3	134·0	59·2	66·9	67·0
47·0	17·0	133·7	59·0	66·7	66·8
·2	16·8	133·4	58·9	66·6	66·7
·4	16·5	133·1	58·8	66·5	66·6
·6	16·2	132·8	58·6	66·3	66·4
·8	15·9	132·5	58·4	66·1	66·2
48·0	15·6	132·1	58·2	65·9	66·0
·2	15·4	131·8	58·1	65·8	65·9
·4	15·2	131·5	58·0	65·7	65·8
·6	14·9	131·2	57·8	65·5	65·7
·8	14·6	130·9	57·6	65·3	65·5

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C (Tralles).
	Over- proof.				
49·0	14·3	130·6	57·4	65·1	65·3
·2	14·1	130·3	57·3	65·0	65·2
·4	13·8	130·0	57·2	64·9	65·1
·6	13·5	129·7	57·0	64·7	64·9
·8	13·2	129·4	56·8	64·5	64·7
50·0	12·9	129·0	56·6	64·3	64·5
·2	12·7	128·7	56·5	64·2	64·4
·4	12·4	128·4	56·4	64·1	64·3
·6	12·1	128·1	56·2	63·9	64·1
·8	11·8	127·8	56·0	63·7	63·9
51·0	11·5	127·4	55·8	63·5	63·7
·2	11·3	127·1	55·7	63·4	63·6
·4	11·0	126·8	55·6	63·3	63·5
·6	10·7	126·5	55·4	63·1	63·3
·8	10·4	126·2	55·2	62·9	63·1
52·0	10·1	125·8	55·0	62·7	62·9
·2	9·9	125·5	54·9	62·6	62·8
·4	9·6	125·2	54·8	62·5	62·7
·6	9·3	124·9	54·6	62·3	62·5
·8	9·0	124·6	54·4	62·1	62·3

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
53·0	8·7	124·2	54·2	61·9	62·1
·2	8·5	123·9	54·1	61·8	62·0
·4	8·2	123·6	54·0	61·7	61·9
·6	7·9	123·3	53·8	61·5	61·7
·8	7·6	123·0	53·6	61·3	61·5
54·0	7·3	122·6	53·4	61·1	61·3
·2	7·0	122·3	53·3	61·0	61·2
·4	6·7	122·0	53·1	60·8	61·0
·6	6·4	121·7	52·9	60·6	60·8
·8	6·1	121·3	52·7	60·4	60·6
55·0	5·8	120·9	52·5	60·2	60·4
·2	5·6	120·6	52·4	60·1	60·3
·4	5·3	120·3	52·3	60·0	60·2
·6	5·0	120·0	52·1	59·8	60·0
·8	4·7	119·6	51·9	59·6	59·8
56·0	4·4	119·2	51·7	59·4	59·6
·2	4·1	118·9	51·6	59·3	59·5
·4	3·8	118·6	51·5	59·1	59·3
·6	3·5	118·3	51·3	58·9	59·1
·8	3·2	117·9	51·1	58·7	58·9

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Over- proof.				
57·0	2·9	117·5	50·9	58·5	58·7
·2	2·6	117·2	50·8	58·4	58·6
·4	2·3	116·9	50·6	58·3	58·5
·6	2·0	116·5	50·4	58·1	58·3
·8	1·7	116·1	50·2	57·9	58·1
58·0	1·4	115·7	50·0	57·7	57·9
·2	1·1	115·4	49·9	57·6	57·8
·4	0·8	115·1	49·8	57·4	57·6
·6	0·5	114·8	49·6	57·2	57·4
·8	0·2	114·4	49·4	57·0	57·2
	Under- proof.				
59·0	0·2	114·0	49·2	56·8	57·0
·2	0·5	113·7	49·1	56·7	56·9
·4	0·8	113·4	48·9	56·5	56·7
·6	1·1	113·0	48·7	56·3	56·5
·8	1·4	112·6	48·5	56·1	56·3
60·0	1·7	112·2	48·3	55·9	56·1
·2	2·0	111·9	48·2	55·8	56·0
·4	2·3	111·6	48·1	55·6	55·8
·6	2·6	111·3	47·9	55·4	55·6
·8	2·9	110·9	47·7	55·2	55·4

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Under- proof.				
61·0	3·3	110·5	47·5	55·1	55·2
·2	3·6	110·2	47·4	54·9	55·1
·4	3·9	109·9	47·2	54·7	54·9
·6	4·2	109·5	47·0	54·5	54·7
·8	4·5	109·1	46·8	54·3	54·5
62·0	4·8	108·7	46·6	54·1	54·3
·2	5·1	108·4	46·5	54·0	54·2
·4	5·4	108·1	46·4	53·8	54·0
·6	5·7	107·7	46·2	53·6	53·8
·8	6·0	107·3	46·0	53·4	53·6
63·0	6·4	106·9	45·8	53·2	53·4
·2	6·7	106·6	45·7	53·1	53·3
·4	7·0	106·2	45·5	52·9	53·1
·6	7·3	105·8	45·3	52·7	52·9
·8	7·7	105·4	45·1	52·5	52·7
64·0	8·1	105·0	44·9	52·3	52·5
·2	8·4	104·7	44·8	52·1	52·3
·4	8·7	104·3	44·6	51·9	52·1
·6	9·0	103·9	44·4	51·7	51·9
·8	9·3	103·5	44·2	51·5	51·7

Indication of Sykes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6 C. (Tralles).
	Under- proof.				
65·0	9·7	103·1	44·0	51·3	51·5
·2	10·0	102·8	43·9	51·2	51·4
·4	10·3	102·4	43·7	51·0	51·2
·6	10·6	102·0	43·5	50·8	51·0
·8	11·0	101·6	43·3	50·6	50·8
66·0	11·4	101·2	43·1	50·4	50·6
·2	11·7	100·9	42·9	50·2	50·4
·4	12·0	100·5	42·7	50·0	50·2
·6	12·3	100·1	42·5	49·8	50·0
·8	12·7	99·7	42·3	49·6	49·8
67·0	13·1	99·3	42·1	49·4	49·6
·2	13·4	98·9	41·9	49·2	49·4
·4	13·7	98·5	41·7	49·0	49·2
·6	14·1	98·1	41·5	48·8	49·0
·8	14·5	97·7	41·3	48·6	48·8
68·0	14·9	97·2	41·1	48·4	48·6
·2	15·2	96·8	41·0	48·2	48·4
·4	15·5	96·4	40·8	48·0	48·2
·6	15·9	96·0	40·6	47·8	48·0
·8	16·3	95·6	40·4	47·6	47·8

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Under- proof.				
69·0	16·7	95·1	40·2	47·3	47·5
·2	17·0	94·7	40·0	47·1	47·3
·4	17·4	94·3	39·8	46·9	47·1
·6	17·8	93·9	39·6	46·7	46·9
·8	18·2	93·5	39·4	46·5	46·7
70·0	18·6	93·0	39·2	46·3	46·5
·2	18·9	92·6	39·0	46·1	46·3
·4	19·3	92·2	38·8	45·9	46·1
·6	19·7	91·8	38·6	45·7	45·9
·8	20·1	91·3	38·4	45·5	45·7
71·0	20·5	90·8	38·2	45·2	45·4
·2	20·8	90·4	38·0	45·0	45·2
·4	21·2	90·0	37·8	44·8	45·0
·6	21·6	89·6	37·6	44·6	44·8
·8	22·0	89·1	37·4	44·4	44·6
72·0	22·4	88·6	37·2	44·1	44·3
·2	22·8	88·2	37·0	43·9	44·1
·4	23·2	87·8	36·8	43·7	43·9
·6	23·6	87·4	36·6	43·5	43·7
·8	24·0	86·9	36·4	43·3	43·5

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Under- proof.				
73·0	24·4	86·4	36·2	43·0	43·2
·2	24·8	86·0	36·0	42·8	43·0
·4	25·2	85·6	35·8	42·6	42·8
·6	25·6	85·2	35·6	42·4	42·6
·8	26·0	84·7	35·4	42·2	42·4
74·0	26·4	84·2	35·2	41·9	42·1
·2	26·8	83·8	35·0	41·7	41·9
·4	27·2	83·3	34·8	41·5	41·7
·6	27·6	82·8	34·6	41·3	41·5
·8	28·0	82·3	34·4	41·0	41·2
75·0	28·5	81·8	34·1	40·7	40·9
·2	28·9	81·4	33·9	40·5	40·7
·4	29·3	80·9	33·7	40·3	40·5
·6	29·7	80·4	33·5	40·1	40·3
·8	30·2	79·9	33·3	39·8	40·0
76·0	30·7	79·4	33·0	39·5	39·7
·2	31·1	78·9	32·8	39·3	39·5
·4	31·5	78·4	32·6	39·1	39·3
·6	31·9	77·9	32·4	38·9	39·1
·8	32·4	77·4	32·2	38·6	38·8

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Under- proof.				
77·0	32·9	76·9	31·9	38·3	38·5
·2	33·3	76·4	31·7	38·1	38·3
·4	33·8	75·9	31·5	37·8	38·0
·6	34·3	75·4	31·3	37·5	37·7
·8	34·8	74·9	31·0	37·2	37·4
78·0	35·3	74·3	30·7	36·9	37·1
·2	35·7	73·8	30·5	36·7	36·9
·4	36·2	73·2	30·3	36·4	36·6
·6	36·7	72·6	30·1	36·1	36·3
·8	37·2	72·0	29·8	35·8	36·0
79·0	37·7	71·4	29·5	35·5	35·7
·2	38·2	70·9	29·3	35·2	35·4
·4	38·7	70·3	29·1	34·9	35·1
·6	39·2	69·7	28·8	34·6	34·8
·8	39·7	69·1	28·5	34·3	34·5
80·0	40·3	68·5	28·2	34·0	34·2
·2	40·8	67·9	28·0	33·7	33·9
·4	41·3	67·3	27·8	33·4	33·6
·6	41·8	66·7	27·5	33·1	33·3
·8	42·3	66·1	27·2	32·8	33·0

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Under- proof.				
81·0	42·9	65·4	26·9	32·5	32·7
·2	43·4	64·8	26·7	32·2	32·4
·4	43·9	64·2	26·5	31·9	32·1
·6	44·4	63·6	26·2	31·6	31·8
·8	45·0	63·0	25·9	31·3	31·5
82·0	45·7	62·3	25·6	31·0	31·2
·2	46·2	61·7	25·4	30·7	30·9
·4	46·8	61·0	25·1	30·4	30·6
·6	47·4	60·3	24·8	30·1	30·3
·8	48·0	59·6	24·5	29·7	29·9
83·0	48·6	58·9	24·2	29·3	29·5
·2	49·2	58·2	23·9	28·9	29·1
·4	49·8	57·5	23·6	28·5	28·7
·6	50·4	56·8	23·3	28·1	28·3
·8	51·0	56·1	22·9	27·8	28·0
84·0	51·7	55·4	22·7	27·5	27·7
·2	52·3	54·7	22·4	27·1	27·3
·4	52·9	54·0	22·1	26·7	26·9
·6	53·5	53·3	21·8	26·3	26·5
·8	54·1	52·5	21·5	25·9	26·1

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Under- proof.				
85·0	54·8	51·7	21·1	25·6	25·8
·2	55·4	51·0	20·7	25·2	25·4
·4	56·0	50·3	20·4	24·8	25·0
·6	56·7	49·5	20·1	24·4	24·6
·8	57·4	48·7	19·8	24·0	24·2
86·0	58·2	47·9	19·5	23·7	23·9
·2	58·8	47·2	19·2	23·4	23·6
·4	59·4	46·5	18·9	23·0	23·2
·6	60·1	45·7	18·6	22·6	22·8
·8	60·8	44·9	18·3	22·2	22·4
87·0	61·5	44·1	18·0	21·8	22·0
·2	62·2	43·4	17·6	21·5	21·7
·4	62·9	42·6	17·3	21·1	21·3
·6	63·6	41·8	17·0	20·7	20·9
·8	64·3	41·0	16·7	20·3	20·5
88·0	65·0	40·2	16·4	19·9	20·1
·2	65·6	39·4	16·0	19·6	19·7
·4	66·3	38·6	15·6	19·2	19·3
·6	67·0	37·8	15·3	18·8	18·9
·8	67·7	37·0	15·0	18·4	18·5

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Under- proof.				
89·0	68·4	36·2	14·7	18·0	18·1
·2	69·1	35·4	14·3	17·6	17·7
·4	69·8	34·6	14·0	17·2	17·3
·6	70·5	33·8	13·7	16·8	16·9
·8	71·2	33·0	13·4	16·4	16·5
90·0	71·9	32·2	13·1	16·0	16·1
·2	72·5	31·4	12·7	15·7	15·8
·4	73·1	30·6	12·4	15·3	15·4
·6	73·8	29·8	12·1	14·9	15·0
·8	74·5	29·1	11·8	14·5	14·6
91·0	75·2	28·4	11·5	14·1	14·2
·2	75·8	27·6	11·2	13·7	13·8
·4	76·4	26·8	10·9	13·3	13·4
·6	77·0	26·1	10·6	12·9	13·0
·8	77·7	25·4	10·3	12·6	12·7
92·0	78·4	24·7	10·0	12·3	12·4
·2	79·0	24·0	9·6	11·9	12·0
·4	79·6	23·3	9·3	11·5	11·6
·6	80·2	22·6	9·0	11·2	11·3
·8	80·8	21·9	8·8	10·9	11·0

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany).	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Under- proof.				
93·0	81·4	21·3	8·6	10·6	10·7
·2	82·0	20·6	8·3	10·2	10·3
·4	82·6	19·9	8·0	9·8	9·9
·6	83·2	19·2	7·7	9·5	9·6
·8	83·8	18·5	7·4	9·2	9·3
94·0	84·4	17·9	7·2	8·9	9·0
·2	85·0	17·2	6·9	8·5	8·6
·4	85·6	16·5	6·6	8·1	8·2
·6	86·2	15·8	6·3	7·8	7·9
·8	86·8	15·2	6·0	7·5	7·6
95·0	87·3	14·6	5·8	7·2	7·3
·2	87·9	13·9	5·5	6·8	6·9
·4	88·5	13·2	5·2	6·5	6·6
·6	89·0	12·5	5·0	6·2	6·3
·8	89·5	11·9	4·8	5·9	6·0
96·0	90·0	11·4	4·6	5·6	5·7
·2	90·6	10·8	4·3	5·3	5·4
·4	91·1	10·2	4·0	5·0	5·1
·6	91·6	9·6	3·8	4·7	4·8
·8	92·1	9·0	3·6	4·4	4·5

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of				
	British proof spirit.	American proof spirit at 60° F. or 15·6° C.	Alcohol by weight (Germany)	Alcohol by volume.	
				At 15° C. (France).	At 15·6° C. (Tralles).
	Under- proof.				
97·0	92·6	8·4	3·4	4·1	4·2
·2	93·1	7·8	3·1	3·8	3·9
·4	93·6	7·2	2·8	3·5	3·6
·6	94·1	6·6	2·6	3·2	3·3
·8	94·6	6·1	2·4	2·9	3·0
98·0	95·1	5·6	2·2	2·7	2·8
·2	95·6	5·0	1·9	2·4	2·5
·4	96·1	4·4	1·7	2·1	2·1
·6	96·6	3·8	1·5	1·8	1·8
·8	97·1	3·3	1·3	1·6	1·6
99·0	97·6	2·8	1·1	1·4	1·4
·2	98·1	2·2	0·8	1·1	1·1
·4	98·6	1·6	0·6	0·8	0·8
·6	99·1	1·0	0·4	0·5	0·5
·8	99·6	0·5	0·2	0·2	0·2
100·0	100·0	0·0	0·0	0·0	0·0

TABLE III, showing the Indications of Sikes' Hydrometer and the percentage of British Proof Spirits with the corresponding indications of the Hydrometers of Russia, Holland, Spain and Switzerland.



TABLE III.

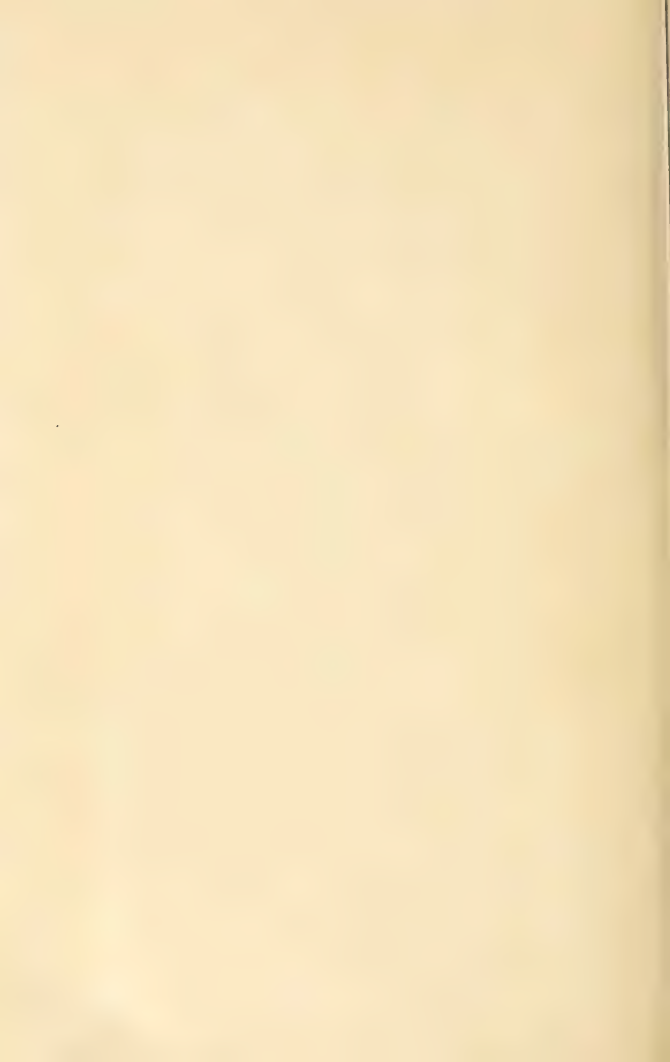
Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of British proof spirit.	Indications of hydrometer of			
		Russia.	Holland.	Spain (Cartier).	Switzerland (Beck).
	Over-proof.				
A 0	73·5	—	25·3	43·5	42·6
1	72·9	—	25	43·2	—
2	72·2	—	—	—	41·8
3	71·6	—	24·5	—	—
4	71·0	—	—	42·2	40·9
5	70·3	—	24	—	—
7	68·9	—	23·5	41·2	39·6
9	67·5	99·2	23	—	—
A 10 = 0	66·7	98·3	—	40·1	38·3
1	66·0	—	22·5	—	—
2	65·2	96·3	—	—	—
3	64·4	—	22	39·1	37·1
4	63·6	94·4	—	—	—
5	62·8	—	21·5	—	—
6	61·9	92·4	—	38·1	35·8
7	61·1	—	21	—	—
8	60·2	90·5	—	—	34·9
9	59·3	—	20·5	37·2	—

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of British proof spirit.	Indications of hydrometer of			
		Russia.	Holland.	Spain (Cartier).	Switzerland (Beck).
	Over- proof.				
10	58·4	88·5	—	—	34·1
11	57·6	—	20	—	—
12	56·7	86·6	—	36·2	—
13	55·7	—	19·5	—	32·9
14	54·8	84·6	—	—	—
15	53·8	—	19	35·2	32
16	52·9	82·6	—	—	—
17	51·9	—	18·5	—	—
18	50·9	80·6	—	34·2	30·8
19	49·9	—	18	—	—
20	48·9	78·7	—	—	30
21	47·9	—	17·5	—	—
22	46·8	76·7	—	33	—
23	45·8	—	17·0	—	28·8
24	44·7	74·8	—	—	—
25	43·6	—	—	32	28
26	42·5	72·8	16·3	—	—
28	40·3	70·9	15·9	31·1	26·8
30	38·0	68·9	15·4	—	26
31	36·9	—	—	30·1	—
32	35·7	67	14·9	—	—
33	34·6	—	—	—	24·8
34	33·4	65	14·5	29·2	—
35	32·2	—	—	—	24

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of British proof spirit.	Indications of hydrometer of			
		Russia.	Holland.	Spain (Cartier).	Switzerland (Beck).
	Over-proof.				
36	31·0	63·1	14	—	—
37	29·8	—	—	28·2	23·2
38	28·5	61·1	13·5	—	—
40	26·0	59·2	13·1	—	22
41	24·8	—	—	27	—
42	23·6	57·2	—	—	—
43	22·3	—	12·4	—	20·9
44	21·0	55·3	—	26·1	—
45	19·7	—	11·9	—	20·1
46	18·3	53·3	—	—	—
47	17·0	—	11·5	25·2	—
48	15·6	51·3	—	—	18·9
49	14·3	—	11	—	—
50	12·9	49·4	—	—	—
51	11·5	—	10·5	24	17·8
52	10·1	47·4	—	—	—
53	8·7	—	10·1	—	17
54	7·3	45·5	—	23·1	—
56	4·4	43·5	9·4	—	15·9
57	2·9	—	—	22·2	—
58	1·4	41·5	9	—	15·1

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of British proof spirit.	Indications of hydrometer of			
		Russia.	Holland.	Spain (Cartier).	Switzerland (Beck).
	Under- proof.				
60	1·7	39·5	—	21·3	—
61	3·3	—	8·3	—	14
62	4·8	37·6	—	—	—
63	6·4	—	7·9	—	13·3
64	8·1	35·6	—	20·1	—
66	11·4	33·0	7·2	—	12·2
68	14·9	31·6	6·8	19	—
69	16·7	—	—	—	11
70	18·6	29·7	—	—	—
71	20·5	—	6·1	18·1	—
72	22·4	27·7	—	—	9·9
73	24·4	—	5·7	—	—
74	26·4	25·7	—	—	—
75	28·5	—	—	16·9	8·8
76	30·7	23·7	5·1	—	—
77	32·9	—	—	—	8·1
78	35·3	21·8	—	16·1	—
79	37·7	—	4·4	—	—
80	40·3	19·8	—	—	7
81	42·9	—	4·0	—	—
82	45·7	17·9	—	15	—
83	48·6	—	3·6	—	6
84	51·7	15·9	—	—	—
85	54·8	—	—	14·1	—

Indication of Sikes' hydrometer at 60° F. or 15·6° C.	Percentage of British proof spirit.	Indications of hydrometer of			
		Russia.	Holland.	Spain (Cartier).	Switzerland (Beck).
	Under- proof.				
86	58·2	13·9	3·0	—	4·9
88	65·0	11·9	—	13·3	—
89	68·4	—	2·3	—	3·8
90	71·9	9·9	—	—	—
91	75·2	—	1·9	12·4	3·1
92	78·4	7·9	—	—	—
93	81·4	—	1·5	—	—
94	84·4	6	—	11·6	2·1
96	90·0	4	0·9	—	—
97	92·6	—	—	10·8	1
98	95·1	2	—	—	—
100	100·0	0	0	10·1	0·1



**PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET**

UNIVERSITY OF TORONTO LIBRARY

QD
305
A4T56
1915
C.1
PASC

